

**AMENDMENTS TO THE DRAWINGS:**

The attached sheet(s) of drawing(s) includes changes:

- to clearly identify element [108] in Fig. 5b;
- to add label "Fig. 6" to that figure;
- to clearly identify element [222] in Fig. 9a and 9b;
- to clearly identify element [225] in Fig. 12a.

Attachments:      Replacement Sheets - 10 sheets.

## REMARKS

### I. Status of the Claims

Claims 1-27 are pending in the application. Claim 28 was previously cancelled.

Claims 1-27 stand rejected. Applicants thank the Examiner for indicating that claims 21 and 23-26 contain allowable subject matter. Office Action at 15.

In the present Amendment, Applicants amended pending claims, including claims 21 and 23-26, to more particularly point out and distinctly claims what Applicants regard as the invention. For instance, Applicants amended the recitations of "additional cell(s)" in claims 9, 17, 20, 22, 23, 25, and 26 to "cooling cell(s)." Support for this amendment can be found in the as-filed specification at page 13, lines 1-2 and page 19, lines 12-13.

The scope of claims 21 and 23-26 was not changed by the amendments. No new matter was introduced by the amendments.

### II. Priority

The Examiner states that "priority has not been perfected" since the English translation for the foreign application is not on file. See Office Action at 2. Applicants acknowledge that:

"[t]he applicant should provide the required translation if applicant wants the application to be accorded benefit of the non-English language application. Any showing of priority that relies on a non-English language application is *prima facie* insufficient if no certified translation of the application is on file." MPEP 2304.01(c).

To the undersigned's knowledge, Applicants are in the process of obtaining such an English translation, and will submit the translation upon receipt.

**III. Information Disclosure Statement**

The Examiner indicated that in order to consider the Research Disclosure in the IDS submitted on December 13, 2004, "a translation is required." See Office Action at 2. Applicants acknowledge that:

"Each information disclosure statement must further include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information listed that is not in the English language." MPEP 609.04(a), III.

Furthermore,

"If a complete translation of the information into English is submitted with the non-English language information, no concise explanation is required. An English-language equivalent application may be submitted to fulfill this requirement if it is, in fact, a translation of a foreign language application being listed in an information disclosure statement. There is no requirement for the translation to be verified." MPEP 609.04(a), III.

Accordingly, Applicants will submit a complete English translation of the Research Disclosure or will provide a concise explanation of the Research Disclosure in a separate filing.

**IV. Drawings**

The objections to the drawings set forth on pages 2-4 of the Office Action should have been rendered moot by the replacement drawings submitted with this response.

**V. Amendments to the Specification**

The Examiner pointed out typographical errors on pg. 15, lines 8 and 21 in the as-filed specification: "0,1 mm / 5 mm" and "0,2 mm / 1 mm" respectively. Applicants

has amended the above-identified informalities to recite “0.1 mm to 5 mm” and “0.2 mm to 1 mm,” as well as similar informalities occurred in the as-filed specification. No new matter was introduced.

**VI. Claim Objections**

The Examiner listed objections to claims 4, 6, 8, 9-13, and 24 due to typographic errors or other informalities. See Office Action at 5. Applicants submit that the current claim amendments have corrected the cited informalities and rendered the objections moot. Applicants respectfully request the objections withdrawn.

**VII. Claim Rejections under 35 U.S.C § 112**

The Examiner rejected claim 2 under 35 U.S.C. § 112, second paragraph for alleged failure to provide sufficient antecedent basis for the claim limitation “the thermal management.” See Office Action at 6. Applicants respectfully submit that the amendment to claim 2 renders moot this rejection. Accordingly, Applicants respectfully request the rejection be withdrawn.

**VIII. Claim Rejections under 35 U.S.C § 102**

**Claims 1, 3, 5-12, 14-16, 17-20, 22, and 27**

Claims 1, 3, 5-12, 14-16, 17-20, 22, and 27 are rejected under 35 U.S.C. § 102(e) as anticipated by US 2002/0142201 (hereinafter “Nelson”) for reasons listed on pages 6-12 of the Office Action. Applicants disagree for at least the reason that, in Nelson, the cooling water flows from the reaction cells into the cooling cells, while independent claim 1 recites that the cooling fluid flows from the cooling cells into the reaction cells.

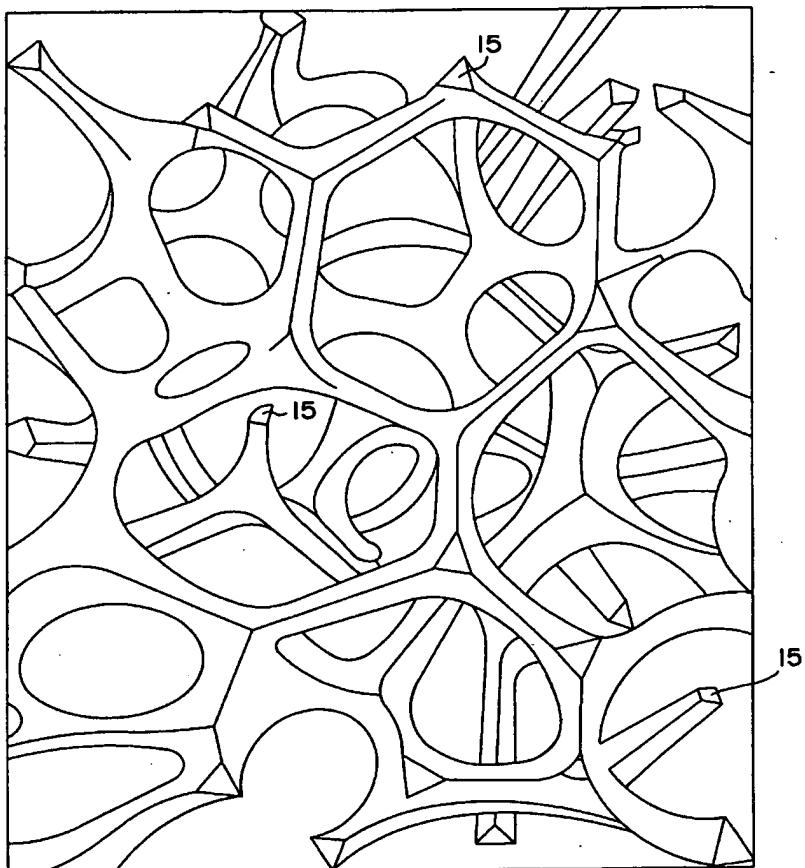
Nelson discloses a fuel cell stack 10 having fuel cells 12 (reaction cell). See Nelson, Fig. 1. Nelson also discloses a cooling element (cooling cell) formed by mating together the anode cooler plate 16 and the cathode cooler plate 20 of adjacent fuel cells, and sealing with a coolant seal gasket 42 and a membrane gasket 44. *Id.* Fig. 1, 3, 4, and Abstract. Furthermore, as shown in Fig. 4, “[t]he water inlet ports 58a, 58b, 58c, 58d run from the reactant side 27 of the cathode cooler plate 20 to the cooling side 50 of the cathode cooler plate.... The water flows along channel 72, through water inlet ports 58a, 58b, 58c, 58d, and into coolant channels 38a, 38b, 38c, 38d.” Nelson at paragraph [0041]. In other words, the cooling water flows from the reaction cell to the adjacent cooling cell.

Different from the fuel cell in Nelson, the claimed invention in claim 1 recites “the injection of a calibrated flow of a cooling fluid into said reaction cell (2, 201),” as amended. For at least the reason set forth above, Nelson does not anticipate claim 1 and all claims dependent therefrom. Applicants respectfully request the rejections withdrawn.

Claims 1, 2, 4, and 27

Claims 1, 2, 4, and 27 are rejected under 35 U.S.C. § 102(b) as anticipated by US 5998054 (hereinafter “Jones”) for reasons listed on pages 12-14 of the Office Action. The Examiner asserts that “the [reaction] cells have a fluid flow plate [120] (electrically conductive reticulated element) made of conductive material, such as graphite and can be a bipolar, monopolar, anode cooler, or cathode cooler plate (col. 5, lines 32-40; fig. 20.” Office Action at 13. Applicants disagree.

Claim 1, as amended, recites “said anodic chamber (1) and said cathodic chamber (10) each has an electrically conductive reticulated element (7, 206).” Jones fails to teach at least this element. The electrically conductive material in the fuel cell in Jones is the fluid flow plate 120. See Jones, Fig. 2-4 and col. 5, lines 32-45. In particular, Jones describes that “flow channels are typically formed on the face of the fluid flow plate by machining,” and that “the flow channels [in the fluid flow plate] carry an appropriate reactant fluid.” *Id.* at col. 5, lines 34-43. In contrast, the reticulated metallic element is described in the present specification as “electrically connecting the conductive bipolar plates 3 to the porous electrode 5 while simultaneously distributing the gaseous reactants.” See Specification at 6, lines 2-5. As an example, the specification makes reference to reticulated materials “of the type described in U.S. Pat. No. 5,482,792.” See specification at 6, lines 2-4. U.S. Pat. No. 5,842,792, in turn, describes a reticulated material as a tridimensional network of metal veins or wires. See Fig. 5 below.



**FIG. 5**

One of ordinary skill in the art can readily appreciate from reading the specification that the reticulated material in the claimed invention is not the conductive material in Jones. Nothing in Jones discloses such a "reticulated element" as recited in independent claim 1. Therefore, Jones does not anticipate claim 1 and all claims dependent therefrom. Applicants request the rejections withdrawn.

Claims 1, 2, 9, and 13

Claims 1, 2, 9, and 13 are rejected under 35 U.S.C. § 102(e) as anticipated by US 2003/0039875 (hereinafter “Horiguchi”) for reasons listed on pages 14-15 of the Office Action. The Examiner asserts that “current collectors [14, 15] made of conductive material and provide reactant to the anode and cathode and are thus reticulated.” Office Action at 14. Applicants disagree.

Current collector plates are machined metal plates, which bear little resemblance to the reticulated material disclosed in the claimed invention. Again, the reticulated metallic element is described in the present specification as “electrically connecting the conductive bipolar plates 3 to the porous electrode 5 while simultaneously distributing the gaseous reactants.” See Specification at 6, lines 2-5. Horiguchi fails to teach at least the claim limitation of “reticulated element” in claim 1, as amended. Applicants respectfully request the rejections withdrawn.

**IX. Conclusion**

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

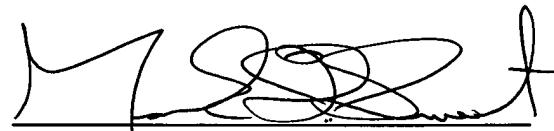
Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: February 19, 2008

By:



Mark D. Sweet  
Reg. No. 41,469